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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/930,787	08/14/2001	Luan Tran	MI22-1784	3875

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EXAMINER

WEISS, HOWARD

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 04/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No

09/930,787

Applicant(s)

TRAN ET AL.

Examiner

Howard Weiss

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 ~~is/are~~ pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 ~~is/are~~ rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 7. 6) ☐ Other: _____

Art Unit: 2814

Attorney's Docket Number: MI22-547

Filing Date: 8/14/01

Continuing Data: Continuation of 08/842,230 (4/22/97 now U.S. Patent No. 6,297,129)

Claimed Foreign Priority Date: none

Applicant(s): Tran et al. (Reinberg)

Examiner: Howard Weiss

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1 to 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al. (U.S. Patent No. 5,383,151), Lu et al. (U.S. Patent No. 5,595,928) and Fazan et al. (IEDM 92).

Onishi et al. show most aspects of the instant invention (e.g. Figures 1(c) and 4 and Column 3 Lines 26 to 56) including a DRAM cell memory array with folded bit lines **14** and LOCOS field oxide **6**. The cells are substantially in a straight line and the areas of the cells are less than $6F^2$ (Column 4 lines 22 and 23). Onishi et al. do not

show "F" no greater than 0.25 microns and the field oxide thickness to be less than 2500 Angstroms.

Lu et al. teach (e.g. Figure 1) teach is conventional, and therefore obvious, in the art to make LOCOS field oxide regions **12** less than 2500 Angstroms (Column 4 Lines 26 to 40). Fazan et al. teach (e.g. Table 1) that sub-half-micron DRAM trends are for pitch values and cell areas (i.e. 256 M densities and greater and consistent with Lu et al. Column 1 Lines 26 to 32) to increase cell density. It would have been obvious to a person of ordinary skill in the art at the time of invention to make LOCOS field oxide regions less than 2500 Angstroms and have pitch sizes as claimed as this is common in the art and to increase cell densities.

3. Claims 7 to 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi et al., Lu et al. and Fazan et al., as applied to Claim 1 above, and in further view of Aoki et al. (U.S. Patent No. 5,747,844).

Onishi et al., Lu et al. and Fazan et al. show most aspects of the instant invention (Paragraph 2) except for the active areas continuous and adjacent DRAM cells isolated by conductive lines. Aoki et al. teach (e.g. Figure 1(b)) to use conductive lines (i.e. Field Shield Isolation) and continuous active areas in DRAM cell memories to enable design rule relaxation $6F^2$ geometry (see section on CELL CONCEPT). It would have been obvious to a person of ordinary skill in the art at the time of invention have the active areas continuous and use conductive lines as isolation as taught by Aoki et al. in the device of Onishi et al., Lu et al. and Fazan et al. to enable design rule relaxation $6F^2$ geometry.

Response to Arguments

4. The Applicants' arguments with respect to Claims 1 to 26 are have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

5. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit 2814 Fax Center is to be used only for papers related to Art Unit 2814 applications. The official TC2800 Before-Final, **(703) 872-9318**, and After-Final, **(703) 872-9319**, Fax numbers will provide the fax sender with an auto-reply fax verifying receipt of their fax by the USPTO.
6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Howard Weiss at **(703) 308-4840** and between the hours of 8:00 AM to 4:00 PM (Eastern Standard Time) Monday through Friday or by e-mail via Howard.Weiss@uspto.gov. Any inquiry of a general nature or relating to the status of this application should be directed to the Group 2800 Receptionist at **(703) 308-0956**.
7. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/ 204, 305, 532	thru 4/10/03
Other Documentation: none	
Electronic Database(s): EAST, IEL	thru 4/10/03

HW/hw
10 April 2003

Howard Weiss
Examiner
Art Unit 2814

